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MEMORANDUM

DCI JOB NO. 2011-106

TO: Terry Smith, Traffic Eng.
Somerville Traffic and
Parking Department

FROM: David R. Ivany, PE, PTOE
Senior Transportation
Engineer

SUBJECT: **Traffic & Parking
Assessment**
39-43 Elmwood St./
40 Cameron Ave.

DATE: November 22, 2011



This memorandum, prepared at the request of the Somerville Traffic and Parking Department, evaluates the traffic and parking impacts associated with the proposed development of 9 residential condominium units at 39-43 Elmwood Street/40 Cameron Avenue in Somerville. Proposed access will utilize two existing modified curb cuts off Elmwood Street (with a third existing curb cut closed) and a reduced width curb cut off Cameron Avenue. The existing mixed-use site is currently occupied by a vacant single story block structure for former commercial uses and a detached single family house. The proposed site plan by The MZO Group dated 11/15/11 is included in the attached Appendix.

Summary Conclusion

Based on an assessment of the existing and proposed traffic condition that is presented on the following pages herein; it can be concluded that the low traffic volumes generated by the residential development will have little measurable impact on the safe and efficient flow of traffic in the vicinity. The provision of 15 parking spaces on site meets the city

ordinance and is expected to well accommodate the anticipated demand for resident and visitor use. Overall, the proposed residential development plan provides a net improvement to the traffic and parking condition when compared to the former commercial site use.

Surrounding Roadway Network

Cameron Avenue is a two-way local/collector street that extends from Holland Street to Massachusetts Avenue in the city of Cambridge, a distance of about 1500 feet. The street width along Cameron Avenue is about 40 feet, providing for residential permit parking on both sides, as well as concrete sidewalks. The posted speed limit is 30 mph.

Elmwood Street is a local north-south residential street that extends from Holland Street south to Tannery Brook Row, a distance of about 1000 feet. Sidewalks and residential permit parking are provided on both sides. Stop sign control exists at the intersection with Holland Street.



Views to the north along Elmwood Street
Proposed development will reduce the footprint of the
Existing commercial structure seen on the left

Existing Site Use

The existing commercial use with frontage on both Elmwood Street and Cameron Avenue is currently vacant. Its most recent activity was a light manufacturing business occupying office and warehouse spaces. The residential house at 39 Elmwood Street is currently rented.



Views to the north along Cameron Avenue
Note the numerous residential driveway curb cuts

Proposed Site Access (Refer to Site Plan)

The main access to the site will be via a proposed 18 foot-wide driveway (that slightly expands the existing curb cut onto Elmwood Street), connecting to 11 parking spaces. The existing residential curb cut at 39 Elmwood Street will remain as is to accommodate 2 tandem parking spaces. The existing 22-foot curb cut onto Cameron Avenue will be reduced to a 10-foot width to similarly allow for 2 tandem parking spaces.

Site Trip Generation

DCI has estimated vehicle trips that will be generated by the proposed residential development by utilizing trip rates presented in the Institute of Transportation Engineers (ITE) Trip Generator Manual – 8th Edition. (see attached Appendix for ITE source data)

9 Units
Residential Condominium
(Land use 230)

<u>Daily</u>	<u>Peak Hour (AM/PM)</u>
In – 26	In – 1/3
Out – 26	Out – 3/2
Total – 52	Total – 4/5

As can be seen from the proposed site trip generation, the low volumes generated by the proposed development will have little, if any, measurable impacts on traffic flows on the surrounding streets. Of the estimated 52 daily trips, about 73% or 38 trips will utilize the main driveway off Elmwood Street while the two tandem driveways will each have about 7 daily trips. When considering the peak hour for all driveways combined, this amounts to about 5 total vehicle trips (one vehicle arriving or departing every 12 minutes).

It is anticipated that the overall vehicle site trips as well as parking demand at the project site will be reduced somewhat due to its proximity to the services provided at Davis Square and the nearby MBTA Red Line. This is reflective of travel behavior in compact urban environments where a higher percentage of residents will utilize travel modes other than private automobile for their daily trips. The project site is between ¼ and ½ mile walking distance of Davis Square and the Red Line MBTA Station. Convenient MBTA bus feeder service (#87 and 88) is available along Holland Street. Residents may also choose to conveniently walk or bicycle to nearby destinations in Somerville and Cambridge.

Proposed On-Site Parking

The proposed development plan provides for 15 parking spaces on site, meeting the City of Somerville Ordinance for total space requirements. However, due to site constraints, the 4 compact spaces provided represent 26.7% of the total. This is above the City Ordinance limit of 20% compact spaces. The net increase is 6.7% or one compact space.

The higher percentage of compact parking can be justified for several reasons as follows:

- ***Recent car ownership trends support higher compact parking use***

The provision for compact parking space has generally followed the U.S. market for automobile ownership. The percentage of compact car use in the USA has been steadily increasing with the price of gasoline. This has coincided with a major shift in the production of compact cars by U.S. automakers. This shift to a higher share of the auto market is expected to remain, along with the higher cost of fuel. Don Johnson, the U.S. sales chief for General Motors was quoted in the LA Times on June 1, 2011 as follows – “Through the first five months of this year, compact cars and compact crossovers accounted for about 31% of the industry’s U.S. sales compared with about 28% in the first two quarters of 2010.”

- ***Applicable city ordinances that support increased compact parking***

Providing or allowing smaller parking stalls for the use of compact cars has generally been adopted by a number of jurisdictions in the Greater Boston area that allow greater than 20% compact spaces for new development.

The Metropolitan Area Planning Council has recently published Low Impact Development strategies for jurisdictions that can reduce the “environmental footprint” of

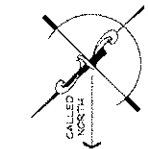
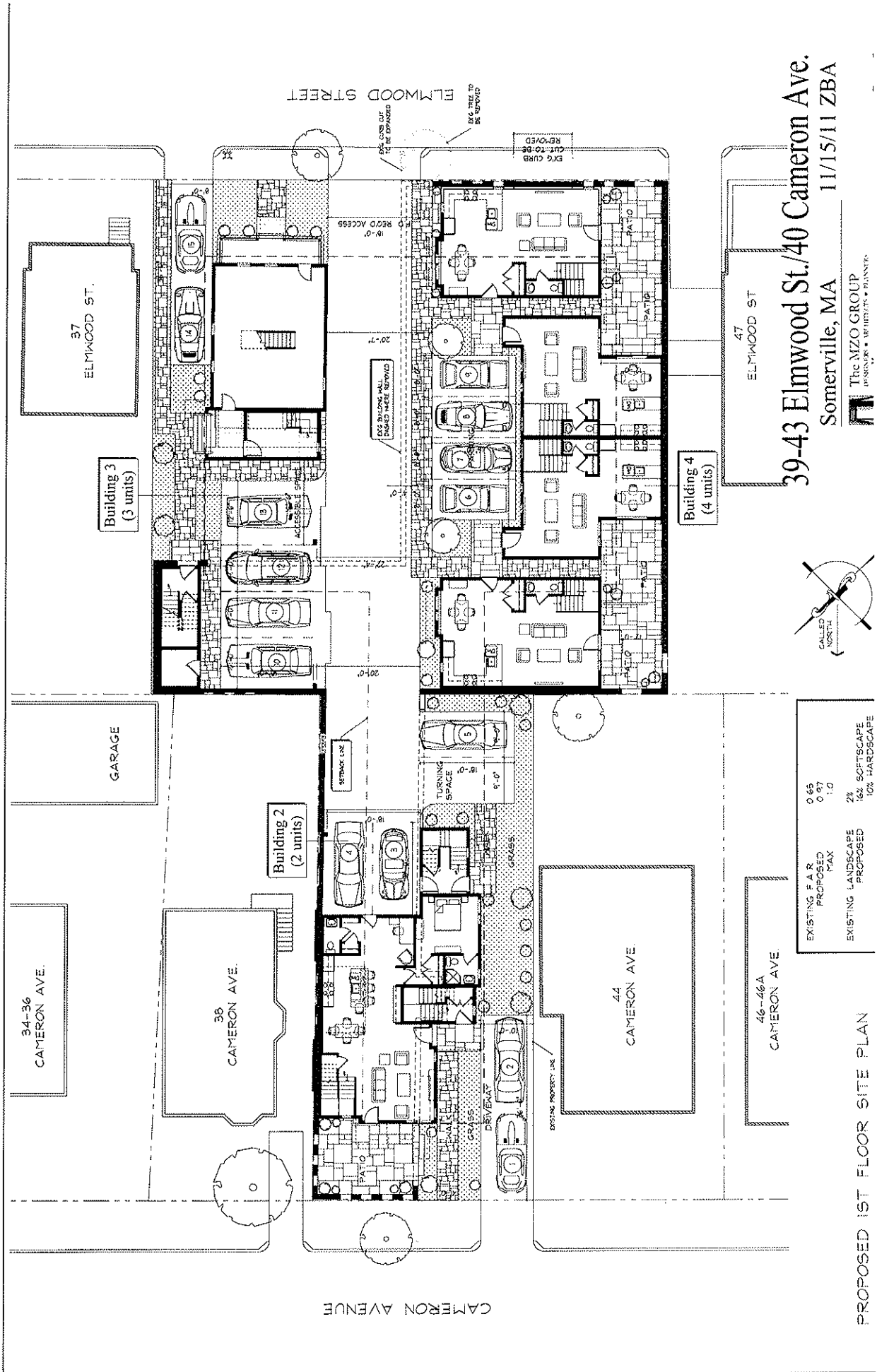
new housing and businesses. Included is a recommendation that up to 30% of site parking requirements provide for compact cars.

- *Site use that allows for effective management of parking supply*

Compact car parking spaces work best where parking turnover is low, such as resident parking where operations can be easily managed. This applies to the project site where the 4 compact stalls provided can be allocated to residents as appropriate who choose to own smaller vehicles as well as smaller parking spaces.

The proposed tandem driveways will require drivers to back out onto Elmwood Street and Cameron Avenue. As shown on the site area photos provided, this type of access prevails along both residential streets. In this environment, drivers are generally aware of the potential for back-in movements and are more attentive and prepared to stop as they drive through the neighborhood. Although the higher travel speeds along Cameron Avenue are a potential concern, clear sight distances and sufficient buffer lane widths do exist to allow for reasonably safe backing movements onto the street. When combined with the low traffic conflicts generated by the single tandem driveway, the proposed access onto Cameron Avenue is considered to be acceptable from a safety standpoint.

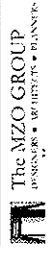
APPENDIX



EXISTING F.A.R.	0.65
PROPOSED TAX	0.97
EXISTING LANDSCAPE	28%
PROPOSED	16% SOFTSCAPE
	10% HARDSCAPE

PROPOSED 1ST FLOOR SITE PLAN

39-43 Elmwood St./40 Cameron Ave.
Somerville, MA 11/15/11 ZBA



Residential Condominium/Townhouse (230)

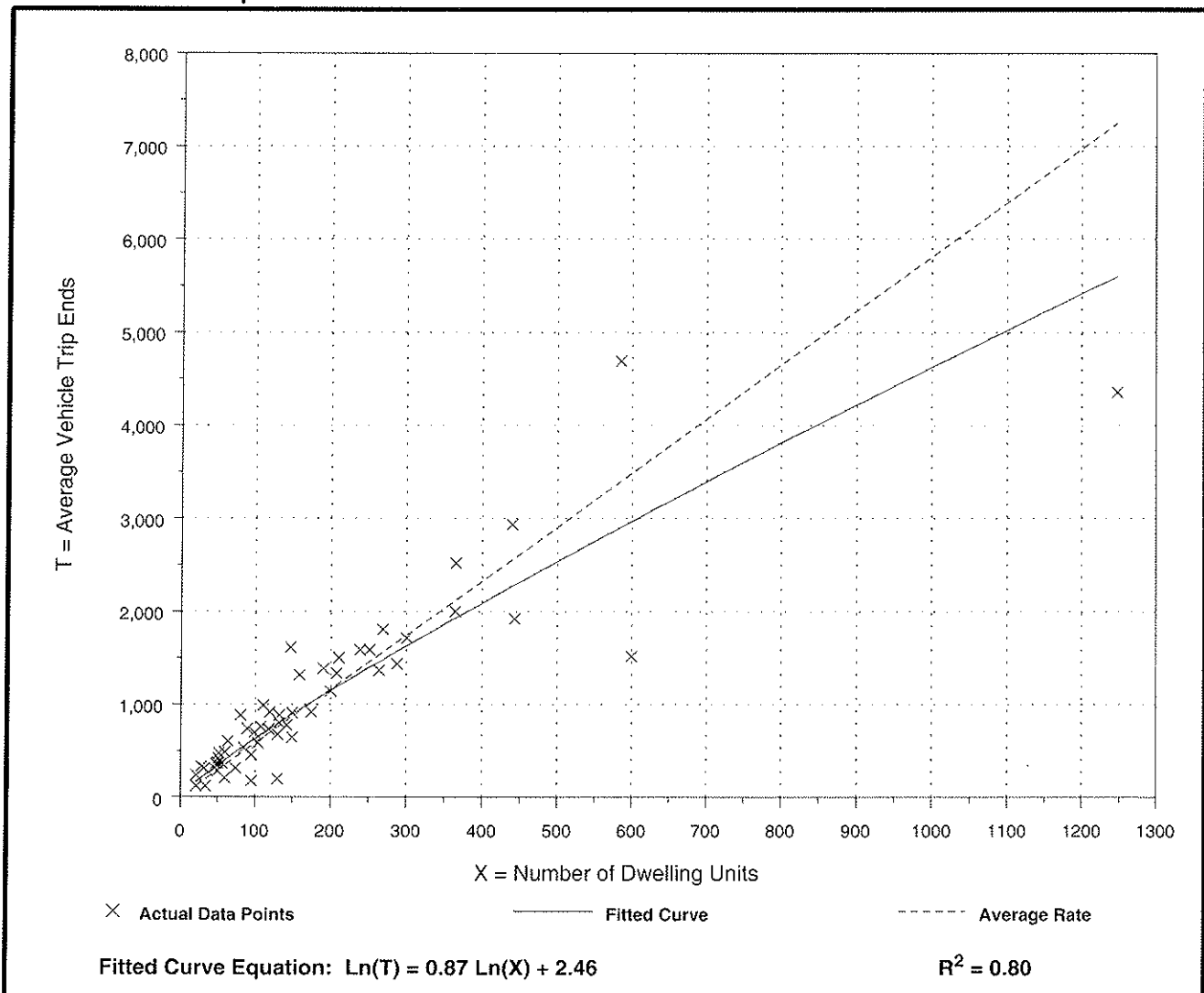
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 56
Avg. Number of Dwelling Units: 179
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.81	1.53 - 11.79	3.11

Data Plot and Equation



Residential Condominium/Townhouse (230)

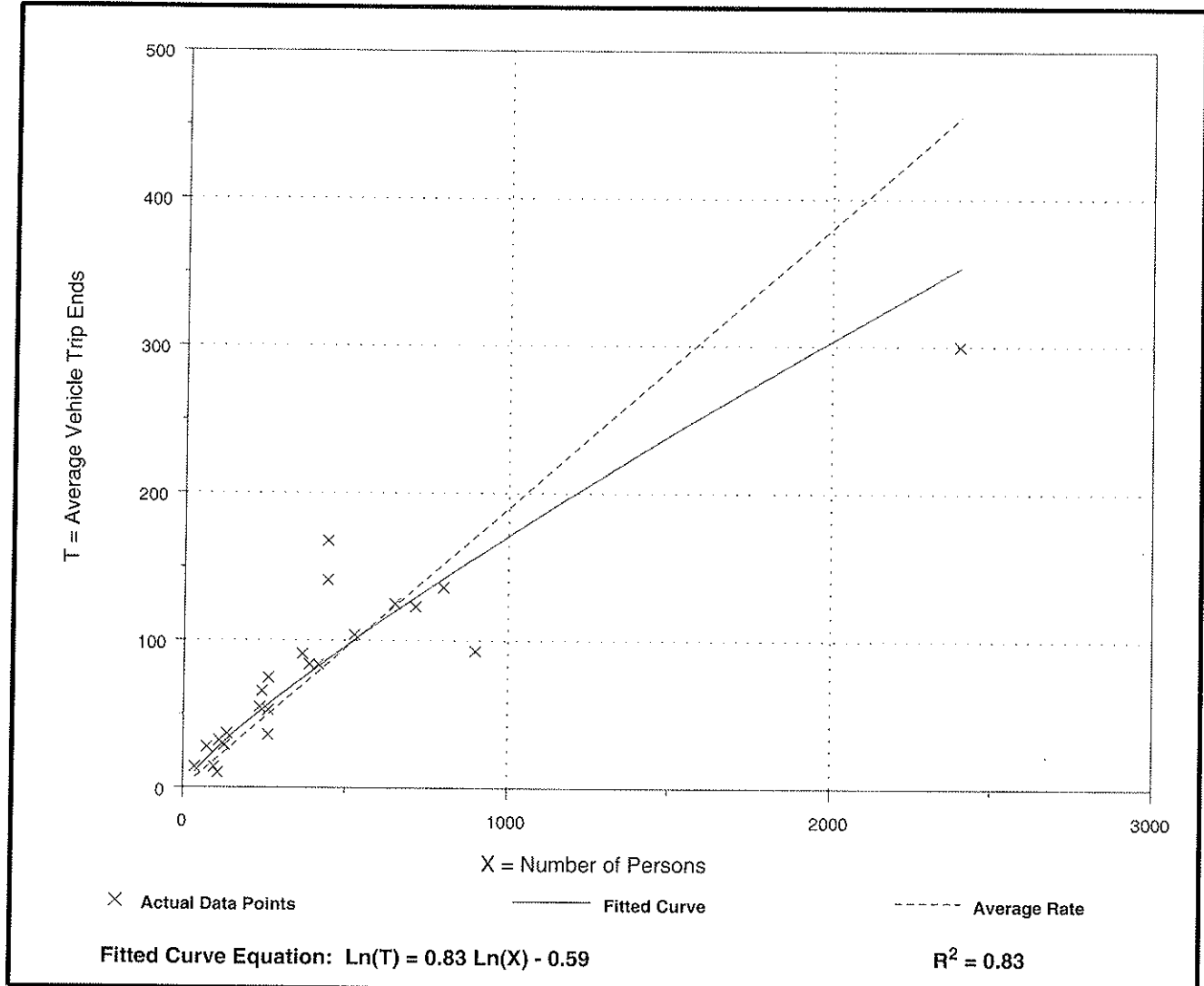
Average Vehicle Trip Ends vs: Persons
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 23
Average Number of Persons: 436
Directional Distribution: 16% entering, 84% exiting

Trip Generation per Person

Average Rate	Range of Rates	Standard Deviation
0.19	0.09 - 0.39	0.44

Data Plot and Equation



Residential Condominium/Townhouse (230)

Average Vehicle Trip Ends vs: Persons
On a: Weekday,
P.M. Peak Hour of Generator

Number of Studies: 19
Average Number of Persons: 468
Directional Distribution: 67% entering, 33% exiting

Trip Generation per Person

Average Rate	Range of Rates	Standard Deviation
0.24	0.15 - 0.57	0.50

Data Plot and Equation

